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10/701,036	11/04/2003	Dragan P. Petrovic	H0004603/SYS-P-1090 US 83	6143

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Patent Services Group
Honeywell International, Inc.
101 Columbia Road
Morristown, NJ 07962

EXAMINER	
LARKIN, DANIEL SEAN	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/701,036	PETROVIC ET AL.	
	Examiner	Art Unit	
	Daniel S. Larkin	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) *1-19 and 40-45* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-39* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05 April 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of Group IV, claims 20-39, the reply filed on 24 January 2005 is acknowledged. The traversal is on the ground(s) that the examiner has provided no reason for insisting on the restriction, specifically, no separate classification among the groups are provided and no separate status in the art where they are classified together has been established. Additionally, no assertion has been made that a different field of search would be required.

This is not found persuasive because with respect to applicants' first argument , the fact that the groupings are classified in the same class and subclass, and therefore does not create a burden for the examiner is not a valid argument. The subclass cited is a broad subclass that contains a plurality of different detectors using a multitude of detection techniques. In each case the examiner has provided an explanation and shown two-way distinctness between the limitations of one grouping and the limitations of the second grouping. Requiring the examiner to search multiple detectors having differing structural elements creates a burden for the examiner to search and give patentable weight to each structural limitation. The examiner would not presume to suggest that the differing structural limitations are merely obvious, and thus each "nuance" claimed would require special consideration and a search, which would create a burden for the examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-19 and 40-45 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in the reply filed on 24 January 2005.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "40-2", and "40-1" have both been used to designate a "second filter", as shown in Figure 3.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference designations "RS" and "RR", as shown in Figure 1, do not appear within the written specification.

Reference numeral "18-1", as shown in Figures 2 and 4, does not appear within the written specification.

Reference numeral "54", as shown in Figures 2 and 3, does not appear within the written specification.

Reference numeral "54-1", as shown in Figure 4, does not appear within the written specification.

Reference numeral "56-2", as shown in Figure 5, does not appear within the written specification.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

Page 4, line 19: Reference numeral -- 18 -- should be inserted prior to the letters "b", "c", and "d".

Page 4, lines 23 and 29: Reference numeral -- 30 -- should be inserted prior to the letter "b".

Page 5, lines 5, 8 and 20: Reference numeral -- 34 -- should be inserted prior to the letter "b".

Page 5, lines 5, 8, and 19: Reference numeral – 36 -- should be inserted prior to the letter "b".

Page 5, line 13: Reference numeral -- 30 -- should be inserted prior to the letter "b".

Page 5, line 18: Reference numeral -- 38 -- should be inserted prior to the letter "b".

Page 5, lines 23, 24, and 30: A -- comma -- should be inserted prior to the term "such".

Page 5, line 29: Numerals "3" and "5" should be corrected to read -- three -- and -- five –, respectively.

Page 5, line 30: A -- comma -- should be inserted prior to the term "such".

Page 6, line 14: Reference numeral -- 30 -- should be inserted prior to the letter "b".

Page 7, line 17: The verb -- is -- should be inserted prior to the term "displaced".

Page 7, line 23: The term "sensor" should be corrected to read -- sensing chamber --.

Page 7, line 26: A -- comma -- should be inserted prior to the term "such" and after the numeral "40-3".

Page 7, line 29: The term -- as -- should be inserted after the term "such".

Page 7, line 31: A -- comma -- should be inserted prior to the term "such".

Page 8, line 1: A -- comma -- should be inserted prior to the term "such".

Page 8, line 4: A -- comma -- should be inserted prior to the term "such" and

after the numeral "42-4".

Page 8, line 6: A -- comma -- should be inserted prior to the term "such" and after the term "brass"

Page 8, line 15: A -- comma -- should be inserted prior to the second occurrence of the term "such".

Page 8, line 28: The term "detectors" should be replaced with the term -- condensers --. Appropriate correction is required.

Claim Objections

7. Claims 20-34 are objected to because of the following informalities:

Re claim 20, claim line 3: The phrase "the cell" lacks antecedent basis.

Re claim 20, claim line 4: The conjunction -- and -- should be inserted after the term "flow". Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 21-27, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 21, claim line 2: The term "high" is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For purposes of determining equivalents one is unclear as to which materials may be considered equivalents and which materials may be excluded because their thermal conductivity values are not high enough.

Re claim 22, claim line 1: Is this filter the same filter recited in claim 20, claim line 2 or a second filter?

Re claim 27, claim line 1: Is this filter the same filter recited in claim 20, claim line 2 or a second filter?

Re claim 30, claim line 1: Is this filter the same filter recited in claim 20, claim line 2 or a second filter?

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 20 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 61-281966 (Morita et al.).

With respect to the limitations of claim 20, the reference to Morita et al. discloses a total carbon measuring instrument, as shown in Figure 12, comprising: a filter (12); a first condensing element (11) having openings (inlet and outlet) through which a gas

carrying fluid can flow; and a gas sensing cell/detector (13) adjacent the condensing element (11), the analyzer module receiving filtered, gas carrying fluid that has passed through the condensing element (11).

With respect to the limitation of claim 28, the reference to Morita et al. discloses that the detector (13) is provided with a fluid flow inlet port in order to receive the sample for analysis.

With respect to the limitation of claim 29, the reference to Morita et al. discloses that the openings (inlet and outlet) of the condensing element (11) and the inlet port are spaced apart along the same fluid flow path.

With respect to the limitation of claim 30, the reference to Morita et al. discloses that the filter (12) is within the same fluid flow path as the condensing element (11) and the inlet port of the detector (13).

12. Claims 20 and 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,151,952 (Mathews et al.).

With respect to the limitations of claim 20, the reference to Mathews et al. discloses an emission testing system, as shown in Figure 2, comprising: a filter (60); a first condensing element/chiller (66) having openings (inlet and outlet) through which a gas carrying fluid can flow; and a gas sensing cell/analyzer module (16) adjacent the chiller (66), the analyzer module receiving filtered, gas carrying fluid that has passed through the condensing element/chiller (66).

With respect to the limitations of claim 27, the reference to Mathews et al. discloses that the filter is a fluid filter (60), and the chiller (66) and the filter (60) are spaced apart along a fluid flow path (55, 56).

With respect to the limitation of claim 28, the reference to Mathews et al. discloses that the analyzer module (16) is provided with a fluid flow inlet port in order to receive the sample for analysis.

With respect to the limitation of claim 29, the reference to Mathews et al. discloses that the openings (inlet and outlet) of the chiller (66) chiller (66) and the inlet port are spaced apart along a fluid flow path (68).

With respect to the limitation of claim 30, the reference to Mathews et al. disclose that the filter (60) is within the chiller and inlet port fluid flow path.

13. Claims 20 and 27-32 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,811,812 (Williams et al.).

With respect to the limitations of claim 20, the reference to William et al. discloses a multi-gas analyzer (400), comprising: a filter (425); a first condensing element/water filter (430) having openings (704), as shown in Figures 7A and 7B, through which a gas carrying fluid can flow; and a gas sensing cell/detector (405) adjacent the condensing element (430), the analyzer module receiving filtered, gas carrying fluid that has passed through the condensing element (430).

With respect to the limitation of claim 27, the reference to Williams et al. disclose that a fluid filter/condensing element/water filter (430) is provided, and that the

condensing element (430) and the filter (425) are spaced apart along a fluid flow path, as shown in Figures 4A and 4B.

With respect to the limitation of claim 28, the reference to Williams et al. discloses that the detector (405) is provided with a fluid flow inlet port in order to receive the sample for analysis.

With respect to the limitation of claim 29, the reference to Williams et al. discloses that the openings (704) of the condensing element/water filter (430) and the inlet port are spaced apart along the same fluid flow path.

With respect to the limitation of claim 30, the reference to Williams et al. discloses that the filter (425) is within the same fluid flow path as the condensing element (430) and the inlet port of the detector (405). Alternatively, the reference to Williams et al. discloses that the condensing element (430) is a second filter in the fluid flow path in addition to the first filter (425)

With respect to the limitation of claim 31, the reference to Williams et al. discloses that the gas analyzer (405) is a non-dispersive infrared (NDIR) analyzer utilizing a sample tube (512) as a sensing cell. The reference discloses that the tube (512) is covered with a reflective coating (518).

With respect to the limitation of claim 32, the reference to Williams et al. appears to disclose that the entire tube (512) is covered with a reflective coating (518) which is symmetrical with the shape of the tube.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 61-281966 (Morita et al.) in view of US 6,528,420 (Tong et al.).

With respect to the limitation of claim 21, the reference to Morita et al. discloses a moisture condensing part (11); however, the reference to Morita et al. fails to expressly disclose a condensing element having a high thermal conductivity member. The reference to Tong et al. discloses a double acting cold trap whereby a steel housing is used to contain a plurality of condensing fins (34) and gas condensing plates (38, 40). Utilizing a condensing element having a high thermal conductivity value would have been obvious to one of ordinary skill in the art as a means to allow the fins and plates to absorb a large quantity of condensation and temperature from the gas, which will in turn increase accuracy of a measurement of the gas.

With respect to the limitation of claim 22, the reference to Morita et al. shows the placement of a filter (12) and the condensing element (11) in the flow path.

With respect to the limitation of claim 23, the reference to Tong et al. discloses the placement of a second condensing element (40) displaced from the first condensing element (34, 38) in the flow path. Providing a second element would have been

obvious to one of ordinary skill in the art as a means of providing increased condensation removal by employing additional plates.

With respect to the limitation of claim 24, the reference to Tong et al. discloses that plate (40) has perforations to allow gas flow through the trap and out an exhaust outlet port (24).

With respect to the limitation of claim 25, the reference to Tong et al. discloses the condensing element comprising a plurality of metal members (34, 38, 40).

With respect to the limitation of claim 26, the reference to Tong et al. discloses that the metal members are spaced apart along a fluid flow path.

16. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,811,812 (Williams et al.) in view of 6,469,303 (Sun et al.).

With respect to the limitations of claim 35, the reference to Williams et al. discloses a method of sensing a gas in a fluid, comprising: filtering (425) and reducing the humidity (430) of the fluid below a selected dew point; and passing the gas to a sensing region (405). The reference to Williams et al. fails to disclose diffusing the reduced humidity fluid to a sensing region.

The reference to Sun et al. discloses a method of sensing a gas in a fluid using a non-dispersive infrared gas sensor (100), comprising filtering (122) a sample of the fluid and diffusing (120) the gas in the fluid through a sensing region. Modifying the analyzer of Williams et al. to provide means to diffuse the gas sample into a sensing region

would have been obvious as a means of eliminating the need for pumping of the gas to the analyzer, thus, minimizing the size and complexity of the analyzer.

With respect to the limitation of claim 36, the reference to Williams et al. discloses using a filter (425) prior to reducing the humidity of the fluid.

With respect to the limitation of claim 37, both references to Williams et al. and Sun et al. disclose projecting at least one beam of radiant energy across the sensing region.

With respect to the limitation of claim 38, the reference to Williams et al. discloses reducing the temperature of the fluid, through the use of a heat sink (431), while reducing the relative humidity of the fluid using a water filter (430).

With respect to the limitation of claim 39, the reference to Williams et al. discloses the use of a reference detector (540); therefore, the gas must be diffused into a reference region in and around the detector.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art to US 2004/0145485 (Tice) discloses a portable combustible gas detector, comprising a filter (22); a first condensing element/condenser(24) inside a housing and a sensing region inside the housing.

The prior art to US 5,348,562 (Burrous et al.) discloses an exhaust gas scrubber and filter assembly comprising a filter (24) and a centrifugal water trap (22)..

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin
AU 2856
14 April 2005

DANIEL S. LARKIN
PRIMARY EXAMINER